

Amendment under 37 CFR §1.111  
Application No. 10/719,020  
Attorney Docket No. 032130

**REMARKS**

(1) Claims 20 and 22-26 are pending in this application, of which claim 20 has been amended. No new claims have been added.

(2) The limitation that “the conductive metal foil has a surface roughness Rz of not more than 2.5 $\mu$ m” is supported by page 10, lines 1-8 of the original specification. The limitation of “the thin resistance layer has a thickness of 0.025 to 0.2 $\mu$ m” is supported at page 13, lines 16 to 20; page 17, lines 15-16; and Table 1 at page 18. The amount of nickel electrodeposition (mg/dm<sup>2</sup>) is evaluated as the plating thickness (page 13, lines 16 to 20). Therefore, one skilled in the art understands that the unit of the “average thickness” in Table 1 at page 18 is “mg/dm<sup>2</sup>.” Because the specification discloses that 89 mg/dm<sup>2</sup> corresponds to about 1 $\mu$ m” (page 17, lines 15-16), the thicknesses of the resistance layers of Examples 2 and 4 are calculated as 0.25 $\mu$ m and 0.20 $\mu$ m, respectively.

(3) Claims 20, 22-25 and 32 were rejected under 35 U.S.C. §102(b) as being anticipated by Atobe (JP 59-50190). §5 of the outstanding Office Action.

First, amended claim 20 recites that “the thin resistance layer has a thickness of 0.025 to 0.2 $\mu$ m.” Atobe disclose “1.0 $\mu$ m” as the thickness of the plating layer in Example 1. The thickness disclosed by Atobe is outside the claimed range.

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Second, amended claim 20 recites “copper foil.” The Examiner read the term “copper foil” or previously recited term “foil of copper” includes copper alloy such as brass disclosed by Atobe. However, such interpretation is unreasonable as explained below.

The specification of the present invention clearly distinguishes the term “copper” from “copper alloy.” The specification lists “copper foil” and “copper alloy film” at page 11, lines 12-13. Then, the specification describes that “copper foil is the best from the view point of etching or recycling.” Page 11, lines 15-16. The specification clarifies that the Applicants of the present invention uses the term “copper foil” as the best example as various potential candidates of the conductive material. The term “copper” is described as being different from the term “copper alloy.” The term “copper” excludes “copper alloy.” The Examiner states that Atobe teaches a brass plate. The office action dated March 7, 2007. At best, the Atobe’s “brass plate” can be construed as a copper alloy film, not a copper film. Thus, the claimed term “copper foil” does not cover the brass plate as disclosed by Atobe.

Third, as explained in MPEP, the words in claims must be given their “plain meaning” unless such meaning is inconsistent with the specification. Title of MPEP 2111.01, Item 1. “[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, *i.e.*, as of the

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effective filing date of the patent application." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (*en banc*). Based on *Phillips v. AWH Corp.*, MPEP states as follows:

The ordinary and customary meaning of a term may be evidenced by a variety of sources, including "the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art."

MPEP 2111.01, Item 3. As explained in MPEP, the ordinary and customary meaning of the claimed term should be construed in consideration with the specification and prosecution history. In the present application, the specification distinguishes the term "copper" from the term "copper alloy" at page 11, lines 12-13. In addition, the Applicants have clarified that term "copper" excludes "copper alloy" in the prosecution. Thus, the "brass plate" disclosed by Atobe does not meet the claimed term "copper foil." Thus, the rejection of amended claim 20 under 35 U.S.C. §102(b) is not supported by Atobe. Reconsideration of the rejection is respectfully requested.

(4) Claims 20, 22-26 and 32 were rejected under 35 U.S.C. §103(a) as being unpatentable over Rice et al. (U.S. Patent No. 4,888,574) in view of Kazonovtse et al. (WPI World Patent Information Derwent, Vol.29) in further view of Applicant's Admissions. §8 of the outstanding Office Action.

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Amended claim 20 recites that “the conductive metal foil has a surface roughness Rz of not more than 2.5µm.”

Rice discloses using nickel sulfate, but does not teach using nickel sulfamate. Kazonovtse et al. does not teach Rz value. Thus, amended claim 20 is not obvious over the cited references. Reconsideration of the rejection is respectfully requested.

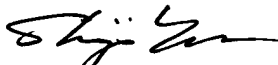
(5) Claims 20, 22-25, and 32 were rejected under 35 U.S.C. §103(a) as being unpatentable over Atobe (JP 59-50190). §9 of the outstanding Office Action.

Atobe does not teach plating a copper foil having a surface roughness Rz of not more than 2.5 µm. Thus, the invention recited in amended claim 20 is not obvious over the cited references. Reconsideration of the rejection is respectfully requested.

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(6) In view of above, Applicants submit that the claims, as herein amended, are in condition for allowance. Applicants request such action at an early date. If the Examiner believes that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned representative at the telephone number indicated below to arrange for an interview to expedite the disposition of this case. If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,  
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Attachment: Petition for Extension of Time